

REMARKS/ARGUMENTS

Applicant files this Preliminary Amendment as a submission enclosed with a Request for Continued Examination filed herewith in the captioned application. Claims 31, 33-39, and 41-50 are pending in the application. No new matter has been introduced as a result of this Amendment. New claim 50 has been added to more clearly define an aspect of the invention, and it and the remainder of the claims are in immediate condition for allowance.

In response to the Examiner's comments in the Advisory Action mailed April 15, 2003, and in addition to the Applicant's comments dated April 2, 2003, the Applicant would like to further explain the significance of the ranges of thickness as they relate to the emitter layer:

As mentioned previously, both Kumar and Lee teach the use of low work function materials or lower work function refractory metal silicides. Typical refractory metal silicide grain sizes range from 300 to several thousand angstroms. The use of these materials on an emitter tip would (a) distort the sharpness of the tip, and (b) introduce additional resistances that would impede the performance of the tip. Furthermore, lattice mismatches between Si and refractory metal silicides (as taught in Lee) causes the materials to be susceptible to volume expansion; as a result, the tips would be prone to further distortion.

However, the present invention claims the use of metal silicides, which are near-noble materials and have a relatively high work function. The grain sizes of near-noble metal silicides are considerably smaller (less than 5nm) and may be formed to form emitter tips with sharp profiles. The process for making these tips is detailed in the specification on pages 7-9. Accordingly, neither Kumar nor Lee disclose these materials and thicknesses.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this

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